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Creating Their Worlds

Close Ties Between Cal Poly and DreamWorks are Giving Alums the Chance to Make Movie Magic

By Jo Ann Lloyd

Chris Gibson hadn't thought much about applying his computer science degree to a film career.

But a couple of Cal Poly computer science graphics courses opened his eyes and, he said, "unraveled some mysteries of movie-making." Then he saw "How to Train Your Dragon," the 2010 hit movie from DreamWorks Animation. And it clicked.

"Some of the things I saw on the screen in that movie really inspired me," said Gibson (B.S., M.S., Computer Science, 2011). "I realized I wanted to work on a DreamWorks movie."

He applied to the company, and two years later dream became reality. Gibson was credited as "technical director" on the November 2012 release "Rise of the Guardians," a Golden Globe nominee for best animated feature. This year, he notched his second credit with the spring release "The Croods."

Gibson is one of three Cal Poly Computer Science alums who helped bring "Rise of the Guardians" to the big screen and among an even larger group of grads helping to make movie magic with DreamWorks. Their success is the fruit of several years of work by Cal Poly computer science faculty to cultivate a symbiotic relationship with the filmmaking powerhouse behind smashes such as "Kung Fu Panda" and "Madagascar."

Ignatios Vakalis, chair of the Computer Science and Software Engineering Department, has spearheaded the effort. When he joined Cal Poly in 2006, he was approached by DWA's chief technology officer to establish sustainable and mutually beneficial connections with Cal Poly.

"DreamWorks wanted to help us develop and then recruit students who had deep technical talent coupled and artistic passion," Vakalis said. "DWA wanted to connect with the best computer science department in the California State University system."

Based on DWA's recommendations, the department has enhanced existing courses and developed new ones in graphics, advanced rendering, animation, interactive entertainment, game design/development, and parallel/multi-core programming. "DreamWorks has told us that our students are gaining invaluable skills only Cal Poly can provide," Vakalis said. "The result is a fresh crop of computer scientists with exceptional skills making their mark in DreamWorks' banner releases."

Pieces of the Puzzle

Gibson has worked as a department technical director at DreamWorks for more than a year. He acts as an interface between modelers (a type of artist) and their computational tools.

"If they run into a problem – such as not being able to make a character's hair look just right – I can fix those tools and design the workflows to address that," Gibson said. "I get to touch a lot of the code."



Professor Zoe Wood (right) looks at a student graphics project.



Cal Poly students polish off their graphics project in a spring class. (Photos by Brittany App)

"Kung Fu Panda 2," "Puss In Boots," and "Madagascar 3."

He said Cal Poly's software engineering curriculum taught him that building the software is just one piece of the puzzle. "Understanding what the customer wants you to build and why certain things are important is also critical," he said.

Meanwhile, fellow alum Dustin Anderson (B.S., M.S. Computer Science, 2008) has worked for the last two years with DreamWorks in Glendale, Calif. His role involves taking care of all things that move but aren't directly characters. He has credits for "Guardians," "Puss In Boots" and "The Croods" and is now working on the upcoming "How to Train Your Dragon 2." He relies on his excellent Cal Poly computer science background, he said, because that's the knowledge he needs to get the simulations working.

"Effects artists come in two flavors," he said, "those that are more technical, and those that are more artistic. I prefer to get my hands dirty making images."

'A Holistic Program'

All three alums point to the efforts of Vakalis and Zoe Wood – who teaches advanced graphics, animation and rendering courses – as instrumental in launching their careers.

"By the time I graduated," Mackenzie Chapter said, "I'd taken several trips to DreamWorks' Glendale campus with Dr. Wood's classes and spoken to a number of visitors she had invited to Cal Poly to discuss DWA's work."

"I love computer graphics," Wood said, "because it combines applied math, algorithms and art, and it gives the programmer a way to communicate complex ideas, stories or data quickly via a visual representation."

Vakalis said Wood is playing a key role in moving forward the department's efforts with DreamWorks. "She is an extraordinary colleague in developing curriculum and mentoring and advising students, and she deserves most of the credit in enhancing the connections with DWA."

The marriage of technical and artistic aspects of the discipline is important to the DreamWorks program, Vakalis said.

"One of the department's top strategic directions is the area of interactive entertainment technologies and game design and development, which combines the technical side of computing with the creative side," he said.

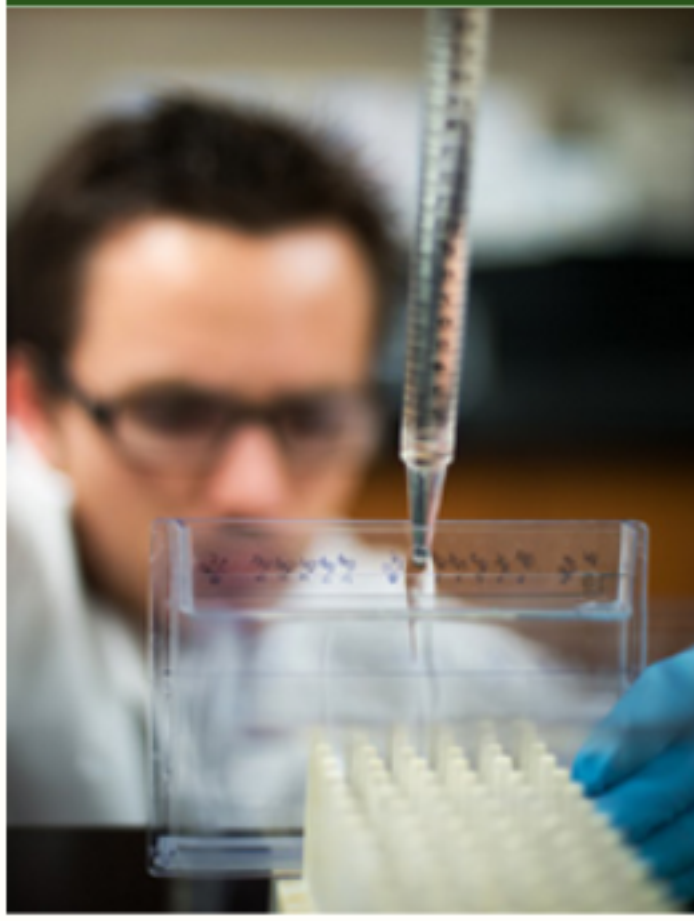
His department is creating partnerships with various programs in the College of Liberal Arts to develop an undergraduate program (minor) that will provide educational opportunities for computer science majors to gain creative/artistic knowledge, and for liberal arts students to gain invaluable computational skills.

"To move to the next level and institute a holistic program in interactive entertainment and game design," Vakalis said, "several new courses need to be developed and additional faculty members need to be hired.

"We have a multi-year vision, to position Cal Poly as a premier university with specialized niches in the fields of interactive entertainment technologies and game design and development. We are preparing the workforce for these emerging markets."



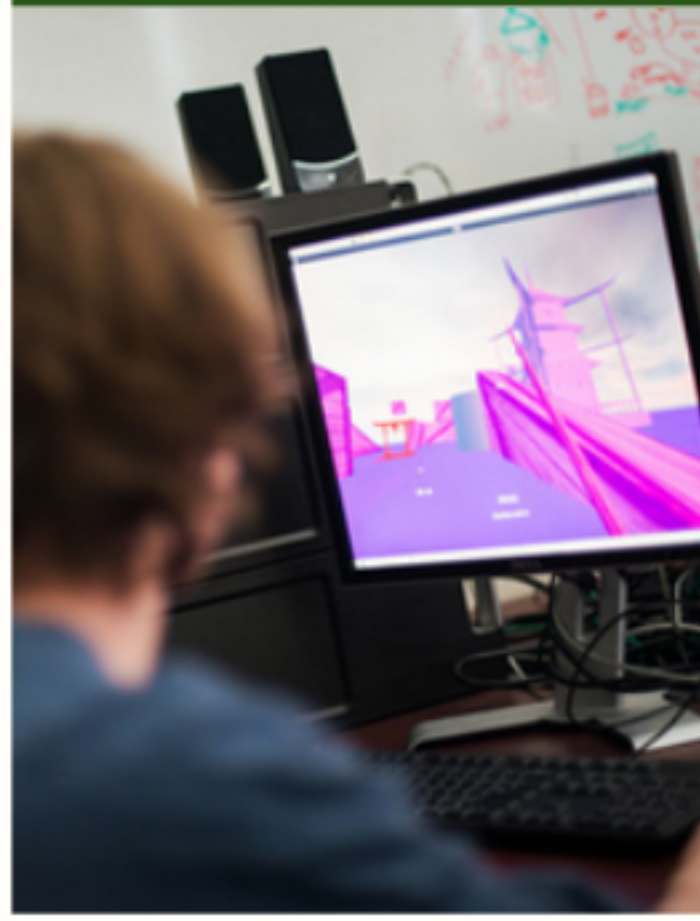
A scene from DreamWorks Animation's "Rise of the Guardians," which featured work by three Cal Poly alums. (Courtesy DreamWorks Animation.)



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